INTERNATIONAL JOURNAL OF FINANCIAL ECONOMICS (IJEFE) https://wikep.net/index.php/IJEFE
Vol. 2 No. 8 February 2026, page 1495-1504 e-ISSN: 3063-3648

ANALYSIS OF MARKETING FUNCTIONS IN THE PALM OIL VALUE CHAIN: A LITERATURE REVIEW ON THE ROLE OF PURCHASING, SALES, TRANSPORTATION, STORAGE, FINANCING, RISK INSURANCE, QUALITY STANDARDISATION AND CLASSIFICATION, AND MARKET INFORMATION IN MAINTAINING PRODUCT QUALITY AND VALUE

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Abstract

Palm oil is a strategic commodity that is greatly influenced by the efficiency and integration of marketing functions throughout the value chain. This article examines the role of eight marketing functions—purchasing, sales, transportation, storage, financing, risk insurance, quality standardisation and classification, and market information—in maintaining quality and increasing the value of palm oil products through a systematic literature review. The results of the analysis show that each marketing function has a specific contribution, ranging from determining the quality of initial raw materials, maintaining the physical and chemical integrity of products during distribution, to strengthening differentiation and premium pricing through sustainable standards and certification. The integration of these functions has been proven to increase value chain efficiency, shorten marketing channels, and improve the distribution of added value for farmers and other actors along the chain.
Keywords: marketing function, palm oil value chain, product quality, added value, market information, quality standardisation, risk insurance, financing.

Introduction

Palm oil is one of the strategic plantation commodities that plays an important role in the Indonesian economy and global market, both as a food ingredient and a raw material for non-food industries such as biodiesel, oleochemicals, and personal care products (Purnomo et al., 2020; Gunawan, 2025). Globally, demand for palm oil continues to increase in line with population growth, urbanisation, and the diversification of palm oil derivative products in various industrial sectors (Purnomo et al., 2020; IJSDP, 2024). In Indonesia, the palm oil sector not only contributes to the country's foreign exchange earnings, but also absorbs a large workforce and is a source of livelihood for millions of smallholders (Gunawan, 2025; Purnomo et al., 2020). However, despite its enormous economic potential, the palm oil value chain still faces various structural challenges, such as fragmented marketing channels, high logistics costs, and information asymmetry among actors.

In the context of agribusiness, the marketing function plays a crucial role in connecting farmers with end markets, while also determining efficiency and value-added distribution throughout the value chain (Nwankwo & Nwosu, 2019; Gunawan, 2025). The

marketing function is not merely related to buying and selling activities, but also includes purchasing, sales, transportation, storage, financing, risk insurance, quality standardisation, classification, and market information, which together create *time utility, place utility,* and *possession utility* (Kotler & Keller, 2016; Nwankwo & Nwosu, 2019). In the palm oil marketing system, each of these functions is carried out by various marketing institutions, ranging from farmers, collectors, middlemen, palm oil mills, to exporters and downstream industries ( ), each of which has a specific role in maintaining the smooth flow of products and value (Nwankwo & Nwosu, 2019; Gunawan, 2025). Therefore, a comprehensive understanding of marketing functions is key to analysing the structure and performance of the palm oil value chain.

Various studies conducted on the added value and marketing channels of palm oil show that high marketing margins are often not proportional to improvements in farmers' welfare, as most of the added value is accumulated by actors upstream and downstream in the chain. In some regions, long channel structures involving many intermediaries cause marketing costs to increase, while farmers only receive a small portion of the final selling price of the product (Nwankwo & Nwosu, 2019; Gunawan, 2025). This condition indicates the need to optimise marketing functions in order to not only increase cost efficiency, but also improve the distribution of added value and maintain socio-economic sustainability for smallholders (Nwankwo & Nwosu, 2019; IJSDP, 2024). From this perspective, analysing the marketing function in the palm oil value chain is not merely a technical logistics issue, but also a matter of policy and sector governance.

The purchasing and sales functions are two key pillars in the palm oil marketing system, as they determine the volume, price, and quality of raw materials received by factories and the final products that reach consumers (Nwankwo & Nwosu, 2019; Gunawan, 2025). The purchase of fresh fruit bunches (FFB) by collectors and factories determines the consistency of supply and initial quality, while the sale of CPO and derivative products determines competitiveness in domestic and international markets (Gunawan, 2025; Purnomo et al., 2020). On the other hand, the functions of transportation and storage play an important role in maintaining *place utility* and *time utility*, while preventing quality deterioration due to delays, high temperatures, or uncontrolled humidity (Kotler & Keller, 2016; IJSDP, 2024). In the context of palm oil, quality deterioration during transportation and storage can lead to an increase in free fatty acid content and a decrease in the selling value of the product (IJSDP, 2024; Gunawan, 2025).

In addition to physical and exchange functions, financing and risk insurance functions also determine the sustainability of the palm oil value chain, especially for farmers and smallholders who often face working capital constraints and production risks (Nwankwo & Nwosu, 2019; IJSDP, 2024). Financing enables farmers to purchase production inputs, while risk insurance helps manage price fluctuations, extreme weather, and logistical disruptions that can interfere with the smooth flow of supply (IJSDP, 2024; Purnomo et al., 2020). On the other hand, the functions of quality standardisation and product classification contribute directly to differentiation and premium pricing in

international markets, especially in the context of sustainable certification such as ISPO and RSPO (IJSDP, 2024; Gunawan, 2025). With clear quality standards in place, value chain actors can ensure that products meet the technical, environmental, and social requirements set by buyers and regulators (IJSDP, 2024; Purnomo et al., 2020).

The market information function also plays a central role in maintaining the efficiency and competitiveness of the palm oil value chain, as it enables farmers and industry players to respond more quickly to changes in prices, regulations and demand trends (Gunawan, 2025; IJSDP, 2024). Information asymmetry between small farmers and large traders or exporters often results in farmers receiving prices below fair value, making the market information function an important instrument for improving transparency and fairness in value distribution (Gunawan, 2025; Nwankwo & Nwosu, 2019). In the digital era, the use of information platforms based on information and communication technology (ICT) can strengthen this function, so that actors throughout the value chain have more equal access to data on prices, regulations, and certification (Gunawan, 2025; IJSDP, 2024). Thus, the integration of market information functions with other marketing functions is a prerequisite for the creation of a more efficient and inclusive palm oil value chain.

Although marketing functions have been widely discussed in agribusiness literature in general, studies that explicitly link the eight marketing functions (purchasing, sales, transportation, storage, financing, risk insurance, quality standardisation, classification, and market information) with product quality and value in the palm oil value chain are still relatively limited (Nwankwo & Nwosu, 2019; Gunawan, 2025). Most studies tend to focus on specific aspects, such as marketing margin analysis, marketing channels, or cost efficiency, without providing a comprehensive analytical framework for the role of each function in maintaining quality and added value (Nwankwo & Nwosu, 2019; Gunawan, 2025). This situation creates a knowledge gap that needs to be filled, especially in the context of Indonesia, which is the world's largest palm oil producer and faces increasingly stringent international regulatory pressures related to sustainability (Purnomo et al., 2020; IJSDP, 2024). Therefore, a systematic literature review of the marketing function in the palm oil value chain is highly relevant to enrich the theoretical foundation and provide direction for further research.

Based on the conceptual framework of marketing functions in agribusiness (Kotler & Keller, 2016; Nwankwo & Nwosu, 2019), this study aims to analyse how eight marketing functions contribute to maintaining quality and increasing product value in the palm oil value chain. Specifically, this article will examine the role of purchasing, sales, transportation, storage, financing, risk insurance, quality standardisation, classification, and market information in maintaining product quality and strengthening the competitiveness of palm oil in domestic and international markets.

Research Method

This study uses a literature review method with a descriptive-analytical approach to analyse the marketing function in the palm oil value chain. Data were obtained from

journals, textbooks, research reports, and policy documents relevant to marketing functions, value chains, and palm oil. The literature selection process was carried out using inclusion and exclusion criteria based on topic, methodology, and publication quality, followed by thematic synthesis to identify the roles of purchasing, sales, transportation, storage, financing, risk insurance, quality standardisation, classification, and market information in maintaining the quality and value of palm oil products (Baumeister & Leary, 2020).

Results and Discussion

The Marketing Function in the Palm Oil Value Chain

The marketing function in the palm oil value chain encompasses a series of interrelated activities, ranging from the purchase of fresh fruit bunches (FFB) to the distribution of crude palm oil (CPO) and its derivative products to the end market, which together create *time utility, place utility,* and *possession utility* for actors and consumers (Sheil & Meijaard, 2025) . In the palm oil marketing system, these functions are carried out by various marketing institutions, including farmers, collectors, middlemen, palm oil mills, exporters, and downstream industries, each of which has a specific role in connecting production with consumption (Nwankwo & Nwosu, 2019; Purnomo et al., 2020). The integration of these marketing functions is crucial in determining cost efficiency, product flow speed, and value-added distribution along the value chain (Gunawan, 2025; IJSDP, 2024).

The purchasing function is the main gateway in the palm oil value chain, as it determines the volume, quality, and sustainability of the FFB supply received by the mill (Gunawan, 2025; Purnomo et al., 2020). Collectors and mills that purchase FFB regularly and based on quality standards can ensure consistency in raw materials, reduce the risk of supply fluctuations, and support the implementation of sustainable certifications such as ISPO and RSPO (Gunawan, 2025; IJSDP, 2024). On the other hand, a purchasing structure dominated by intermediaries often results in farmers receiving prices below fair value, making the optimisation of purchasing functions key to improving the welfare of smallholder farmers (Nwankwo & Nwosu, 2019;(Lifianthi et al., 2022) .

The sales function acts as a link between the factory and the end market, both domestic and international, by determining prices, negotiating contracts, and marketing strategies for CPO products and their derivatives (Purnomo et al., 2020; IJSDP, 2024). Effective sales enable industry players to take advantage of global price fluctuations, enter high-value market segments, and increase the competitiveness of Indonesian palm oil in the international market (Purnomo et al., 2020; UNDP, 2021). However, the length of the marketing chain and the dominance of intermediaries often lead to increased marketing margins, while farmers only receive a small portion of the final selling price of the product (Nwankwo & Nwosu, 2019;(Lifianthi et al., 2022) .

Transportation functions contribute directly to *place utility* by moving fresh fruit bunches (FFB) from plantations to mills, crude palm oil (CPO) from mills to ports, and final

products to end consumers, thereby ensuring product availability in the required locations (Kotler & Keller, 2016; Gunawan, 2025). In the context of palm oil, transport efficiency is crucial because FFB is perishable and time-sensitive, meaning that delays can lead to an increase in free fatty acid levels and a decline in CPO quality (Gunawan, 2025; IJSDP, 2024). On the other hand, high transportation costs are one of the main factors that burden marketing margins and reduce the competitiveness of palm oil in the international market (Gunawan, 2025; Purnomo et al., 2020).

The storage function plays a role in creating *time utility* by holding products at the right time and location, thereby avoiding oversupply during harvest season and shortages during lean season (Kotler & Keller, 2016; Gunawan, 2025). In the palm oil value chain, the storage of CPO and derivative products must meet technical standards to prevent oxidation, increased free fatty acid content, and contamination, which can reduce the selling value of the product (IJSDP, 2024; Gunawan, 2025). Good storage practices also enable industry players to respond more flexibly to changes in market demand and price fluctuations (Gunawan, 2025; Purnomo et al., 2020).

Financing functions enable farmers and smallholders to purchase production inputs, pay wages, and finance marketing operations, thereby maintaining the smooth flow of products throughout the value chain (Nwankwo & Nwosu, 2019; IJSDP, 2024). In the context of palm oil, limited access to financing is often a major obstacle for smallholders, so the financing function needs to be strengthened through formal financial institutions, cooperatives, or sharia-based financing schemes (Gunawan, 2025; Purnomo et al., 2020). On the other hand, efficient financing can increase production capacity, shorten marketing channels, and increase value-added distribution for farmers (Nwankwo & Nwosu, 2019;(Lifianthi et al., 2022) .

Risk insurance plays an important role in managing the various risks faced by actors in the palm oil value chain, including production risks (weather, pests), market risks (price fluctuations), and logistics risks (damage, accidents) (IJSDP, 2024; Purnomo et al., 2020). With risk insurance, farmers and industry players can reduce uncertainty, increase confidence, and strengthen the stability of the value chain (IJSDP, 2024; UNDP, 2021). On the other hand, the implementation of effective risk insurance requires regulatory support, education, and incentives for small players to participate in insurance schemes (IJSDP, 2024; Purnomo et al., 2020).

Quality standardisation and product classification functions contribute directly to differentiation and premium pricing in international markets, particularly in the context of sustainable certification such as ISPO and RSPO (IJSDP, 2024; Gunawan, 2025). Clear quality standards enable value chain actors to ensure that products meet the technical, environmental, and social requirements set by buyers and regulators (IJSDP, 2024; Purnomo et al., 2020). On the other hand, product classification based on grade and certification can increase the competitiveness of Indonesian palm oil in the global market (Gunawan, 2025; IJSDP, 2024).

Market information functions play a central role in maintaining the efficiency and competitiveness of the palm oil value chain, as they enable farmers and industry players to respond more quickly to changes in prices, regulations and demand trends (Gunawan, 2025; IJSDP, 2024). Information asymmetry between small farmers and large traders or exporters often results in farmers receiving prices below fair value, making the market information function an important instrument for improving transparency and fairness in value distribution (Gunawan, 2025; Nwankwo & Nwosu, 2019). In the digital era, the use of information platforms based on information and communication technology (ICT) can strengthen this function, so that actors throughout the value chain have more equal access to data on prices, regulations, and certification (Gunawan, 2025; IJSDP, 2024).

Overall, the eight marketing functions (purchasing, sales, transportation, storage, financing, risk insurance, quality standardisation, classification, and market information) are interrelated and mutually reinforcing in maintaining the quality and value of palm oil products (Nwankwo & Nwosu, 2019; Gunawan, 2025). The integration of these functions within a coordinated value chain framework can increase cost efficiency, shorten marketing channels, and increase value-added distribution for farmers (Gunawan, 2025;(Lifianthi et al., 2022) . On the other hand, value chain fragmentation, high logistics costs, and information asymmetry remain key challenges that need to be addressed through institutional strengthening, digitalisation, and regulations that support sustainability (Purnomo et al., 2020; IJSDP, 2024).

The Role of Marketing in Maintaining Product Quality and Value

The role of marketing in maintaining the quality and value of palm oil products cannot be separated from the dynamics of the value chain that connects smallholders to the global market (Nwankwo & Nwosu, 2019; Gunawan, 2025). In this context, the marketing function serves not only as a transaction mechanism, but also as a determinant of quality standards, risk manager, and driver of product differentiation that influences consumer perception and premium pricing (Kotler & Keller, 2016; IJSDP, 2024). When marketing functions are carried out in an integrated manner, the palm oil value chain is able to produce products that are consistent in physical, chemical, and socio-environmental terms, thereby strengthening competitiveness in both domestic and international markets (Purnomo et al., 2020; IJSDP, 2024).

The purchasing function plays a direct role in maintaining product quality by setting the standards for fresh fruit bunches (FFB) accepted by the factory, including moisture content, ripeness level, and freedom from contamination (Gunawan, 2025; Purnomo et al., 2020). When collectors and factories implement strict purchasing criteria, farmers tend to improve their cultivation and harvesting practices, resulting in more stable raw material quality (Gunawan, 2025;(Lifianthi et al., 2022) . On the other hand, standard-based purchasing also enables mills to reduce the risk of CPO quality deterioration due to raw materials that do not meet specifications, thereby preventing product value erosion at the early stages of the value chain (Gunawan, 2025; IJSDP, 2024).

Sales functions contribute to maintaining product value through market differentiation, adequate pricing, and the implementation of sustainable certification recognised by consumers (Purnomo et al., 2020; IJSDP, 2024). By offering CPO and its derivatives that meet international standards (e.g. ISPO, RSPO, or technical quality standards), industry players can obtain premium pricing and avoid value degradation due to the negative image of palm oil (IJSDP, 2024; Purnomo et al., 2020). In addition, sales strategies oriented towards high-value market segments (e.g. food-grade products, biodiesel or oleochemicals) enable actors to absorb more added value from the processing and distribution processes (Purnomo et al., 2020; UNDP, 2021).

Transportation functions play a role in maintaining the physical and chemical quality of products by minimising delays, excessive vibration, and exposure to high temperatures during the transport of fresh fruit bunches (FFB) and crude palm oil (CPO) (Kotler & Keller, 2016; Gunawan, 2025). Delays in transporting FFB from the plantation to the factory can lead to an increase in free fatty acid levels and a decrease in CPO yield, thereby directly reducing the value of the product (Gunawan, 2025; IJSDP, 2024). On the other hand, the use of an efficient fleet and routes not only maintains quality but also reduces logistics costs, so that the added value generated by the value chain is not eroded by excessive marketing costs (Gunawan, 2025; Purnomo et al., 2020).

Storage functions play an important role in maintaining product quality stability by preventing oxidation, increased free fatty acid levels, and contamination during the storage period of CPO and derivative products (IJSDP, 2024; Gunawan, 2025). Good storage practices, such as the use of closed tanks, temperature control, and proper stock rotation, enable industry players to respond to fluctuations in demand and prices without compromising product quality (Gunawan, 2025; Purnomo et al., 2020). In addition, efficient storage also allows factories to adjust their sales timing to favourable market conditions, thereby maximising product value (Gunawan, 2025; IJSDP, 2024).

Financing functions contribute to maintaining product quality and value by enabling farmers and smallholders to access quality production inputs, better processing technologies, and capacity-building training (Nwankwo & Nwosu, 2019; IJSDP, 2024). Adequate access to financing enables farmers to implement better cultivation practices, such as the proper use of fertilisers and pesticides, resulting in higher quality fresh fruit bunches (Gunawan, 2025; Purnomo et al., 2020). On the other hand, efficient financing also enables mills to invest in more modern processing equipment, thereby increasing the yield and quality of the CPO produced (Gunawan, 2025; IJSDP, 2024).

Risk insurance plays an important role in maintaining product value stability by managing various risks that can disrupt supply and product quality, such as extreme weather, price fluctuations, and logistical disruptions (IJSDP, 2024; Purnomo et al., 2020). With risk insurance, farmers and industry players can reduce uncertainty and continue production and marketing operations without being disrupted by large losses due to unexpected risks (IJSDP, 2024; UNDP, 2021). On the other hand, effective risk insurance also enables value chain actors to offer products at more stable and consistent prices,

thereby increasing consumer confidence and product value (IJSDP, 2024; Purnomo et al., 2020).

Quality standardisation and product classification functions play a direct role in maintaining product quality and value by establishing clear and consistent technical parameters for CPO and its derivative products (IJSDP, 2024; Purnomo et al., 2020). Clear quality standards enable value chain actors to ensure that products meet the technical, environmental, and social requirements set by buyers and regulators (IJSDP, 2024; UNDP, 2021). On the other hand, product classification based on grade and certification can enhance the competitiveness of Indonesian palm oil in the global market, as consumers and buyers can choose products that suit their needs (Gunawan, 2025; IJSDP, 2024).

The market information function plays a central role in maintaining product quality and value by enabling farmers and industry players to respond more quickly to changes in prices, regulations, and demand trends (Gunawan, 2025; IJSDP, 2024). Information asymmetry between small farmers and large traders or exporters often results in farmers receiving prices below fair value, making the market information function an important instrument for improving transparency and fairness in value distribution (Gunawan, 2025; Nwankwo & Nwosu, 2019). In the digital era, the use of information platforms based on information and communication technology (ICT) can strengthen this function, so that actors throughout the value chain have more equal access to data on prices, regulations, and certification (Gunawan, 2025; IJSDP, 2024).

Overall, the eight marketing functions (purchasing, sales, transportation, storage, financing, risk insurance, quality standardisation, classification, and market information) are interrelated and mutually reinforcing in maintaining the quality and value of palm oil products (Nwankwo & Nwosu, 2019; Gunawan, 2025). The integration of these functions within a coordinated value chain framework can increase cost efficiency, shorten marketing channels, and increase value-added distribution for farmers (Gunawan, 2025;(Lifianthi et al., 2022) . On the other hand, value chain fragmentation, high logistics costs, and information asymmetry remain key challenges that need to be addressed through institutional strengthening, digitalisation, and regulations that support sustainability (Purnomo et al., 2020; IJSDP, 2024).

Conclusion

The marketing function plays a central role in determining efficiency, quality, and added value throughout the palm oil value chain. Purchasing and sales serve as regulators of the flow of fresh fruit bunches (FFB) and crude palm oil (CPO), while also determining the initial quality of raw materials and the position of products in domestic and international markets. Transportation and storage maintain *time utility* and *place utility* by minimising physical and chemical damage to products, thereby preserving free fatty acid content, yield, and quality stability until the product reaches the end consumer.

Financing and risk insurance contribute to the sustainability of the value chain by enabling farmers and smallholders to access capital, technology, and protection against

price fluctuations and production risks. Quality standardisation and product classification strengthen differentiation and premium pricing through the implementation of sustainable certification (ISPO, RSPO) and technical parameters recognised by the global market. Market information acts as a link between field conditions and price dynamics and regulations, enabling actors to respond more quickly to changes and reduce information asymmetry that has traditionally disadvantaged smallholder farmers.

Overall, the eight marketing functions—purchasing, sales, transportation, storage, financing, risk insurance, quality standardisation and classification, and market information—are proven to be interrelated in maintaining quality and strengthening the value of palm oil products. Optimising the integration of these functions through institutional strengthening, information digitalisation, and regulations that support sustainability can improve value chain efficiency, shorten marketing channels, and improve value-added distribution for farmers and other actors along the chain.

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